

# Research on the influencing factors of consumer food safety risk perception

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**Key words:** food safety; risk perception; trust; influencing factors

**Abstract:** Based on the risk perception theory and trust theory as the research basis, constructs the consumer perception of food safety risks, industry level and enterprise level, the consumer trust endowment features four aspects of relationship model etc.. Through the questionnaire survey results show that industry level and enterprise level of trust trust has a significant impact on the food safety risk, consumer to government, media, farmers, retailers trust is high, the consumer perception of food safety and health risk, performance risk, financial risk, psychological risk is low.

## Introduction

Food safety is a major societal problem, which concerns the national economy and the people's livelihood. Because it is not only harmful to people's health, it will cause intense psychological panic society, but it also makes people lose confidence in the domestic food consumption, caused a certain degree of trauma to the national economy. The social psychological panic is often not the real level of risk, but the perceived risk level of , to summarize the literature after finishing reading in the background, food safety issues, perceived risk of consumers and the different subjects of food is related to the degree of trust in the market . Has the decisive significance of the psychological mechanism of consumer risk perception problems that research on food safety, how to reduce the perceived risk level of food safety problems, guiding practice, reshaping consumer confidence in food. [1]

## Research models and assumptions

**Consumer trust and food safety risk perception.** As far as food safety is concerned, the government plays an important role in proving the legitimacy of norms and standards, as well as punishing opportunism. It provides a strong guarantee for people, which may reduce the total risk perception. Specifically, when the consumer to government trust enough, even to know all aspects of food production, the specific operation, can also believe that the government will take the people's life safety, the food production and processing technology, strict management, to prevent the harm consumers life of substandard food to the market. Even if the government's commitment to the product even if there is a problem, when consumers are accused of making decisions around the wrong people, customers can also be attributed to the government, thereby reducing the psychological risk. Then put forward the hypothesis 1 as follows:

H1: the higher the trust of consumers, the lower the perceived risk of food safety

**Consumer media trust and food safety risk perception.** The media play a structural role in overseeing the food market and creating trust in maintenance. Consumer trust in food supplies is not

out of thin air. If the food industry law enforcement officers and market oversight team members are not trustworthy, then it will affect the client trust in food suppliers. For customers, the mass media is a powerful tool for supervision, especially now the network so developed, when a food safety incident, propagation speed is faster than before many times, the scope of the audience is to expand. Therefore, we can think that the higher the customer's trust in the media, the more dependent on the media to monitor the food companies, their health, function, financial and psychological perception of risk will be reduced. Thus, the hypothesis 2 is as follows:

H2: the higher the consumer media trust, the lower the perceived risk of food safety

**Consumer trust and food safety risk perception.** Farmers are the source of food production. Food production is the first link is also a crucial link. The quality of the crops planted by farmers for food processing determines the quality of the subsequent production and processing. Farmers to provide high-quality agricultural products, so that the production process transparent, frequent interaction with customers, etc., greatly enhance the consumer's trust in their products. Therefore, if the farmers can speculate the rational use of chemical fertilizers and pesticides, the health and safety of consumers to consumers' real harmless information to consumers in the first place, and the safety and health of consumers to enhance its commitment to the trust, so consumers' psychological risk, health risk, performance risk, financial risk will be reduced. Thus, the hypothesis 3 is as follows:

H3: the higher the consumers' trust, the lower the perceived risk of food safety

**Consumer trust and food safety risk perception.** The retailer is the behavior subject that directly interacts with the client, and the frequency of communication between consumers and retailers is much higher than that of other actors. For a long time, accumulated a certain degree of interpersonal trust. Therefore, compared to other actors, the possibility of the retail business to clients with lower food safety risk perception. However, it cannot be ignored is that there are still a lot of information asymmetry between retailers and consumers, leading consumers to perceive the risks. On the contrary, if the retailer is to be honest and trustworthy, honest, sincere treatment of clients, adhere to the occupation morality, social responsibility, will enhance consumer confidence, reduce the perceived risk of. Therefore, if consumers have a high degree of trust in retailers, retailers believe that the conscience is a businessman, then their health, financial, psychological, functional risk perception will be decreased. Thus, the hypothesis 4 is as follows:

H4: the higher consumer trust, the lower the perceived risk of food safety

### 3. Research design and methods

**Data collection.** The main research objective of this paper is to select the consumers of large fresh supermarket as the research object. The sample is mainly from the fresh supermarket around the Xinjiang Tarim University. As customers often go to the supermarket are more familiar with the food and sensitive, will learn more about the enterprise or industry information, but also a strong sense of food safety risks. Therefore, the selection of this group is more favourable to the study. The investigation time was from June 2016 to August, 180 questionnaires were forwarded, and the valid questionnaires were recovered, and the effective recovery rate was 89%. From the perspective of gender, the male sample of 81 people, accounting for 50.6%, female sample of 79 people, accounting for 49.4%. From the age of 20 years old, less than or equal to the number of samples is 11, accounting for 6.9%; the number between 21 to 30 years old accounted for 16.9% of the sample was 27, and number between 31 to 40 years old accounted for 28.8% of the sample for 46 people; number between 41 to 50 years old accounted for 26.3% of 42 samples people over the age of 51, the number of samples is 34, accounting for 21.3%. From the education point of view, the number of primary school education and the sample accounted for 4.4% to 7 people, junior high school

education accounted for 22.5% of the number of samples for 36 people, high school / vocational school / number of secondary education for a sample of 40 people, accounting for 25%, the number of samples of tertiary education accounted for 15.6% to 24 people, the number of Bachelor degree or above for 52 people, accounting for 32.5%. From the survey of income point of view, the number of annual household income of 50 thousand yuan in the sample of 15 people, accounting for 9.4%; the number of 50 thousand to 70 thousand of the sample of 33 people, accounting for 20.6%, the number of 70 thousand to 80 thousand of the sample of 45 people, accounting for 28.1%, the number of 80 thousand to 90 thousand of the sample accounted for 25% to 40 years,. Income of more than 100 thousand 27 people, accounting for 16.9%.[2]

**Variable setting and measurement.** Study on the design of the questionnaire is divided into three parts: the independent industry level trust (the trust in government, the media and enterprise level trust (trust) farmers trust retailers trust) measurement, the measurement is mainly due to the variable measurement of food safety risk perception, this part of the mature scale (Mooney, 2000), in order to meet the the reading habits of people, made the appropriate changes with local conditions. Will the food safety risk perception is designed intrisk and psychological risk four important conceptions; also measured some control variables, o four parts, respectively measuring health risk, financial risk, functional such as the consumer's gender, age and education level and family income, etc.. This part of measurement items is used Likert5 point score, 1 to 5 represents a very disagree to very much agree. In order to ensure the reliability of the survey data, this study emphasizes that the questinnnaire data are only used for scientific research.

The use of SPSS18.0 statistical software regression analysis, the government trust, trust, trust the media and retail business as farmers as factors affecting consumer food safety risk perception behavior at the same time, combined with the related analysis and literature research results, the individual endowment characteristics in consumer education, gender, educational level, personal monthly income as possible factors the influence of linear model to analyze together into. Regression analysis of all variables before the treatment centres, the regression equation of variables to avoid multicollinearity. Variance analysis, parameter test and regression analysis were utilized to test test the significance and correlation of statistical data.[4]

## **Empirical analysis**

**Data testing.** Reliability and validity test. The validity analysis shows that, in order to ensure the scientific validity of the research, the data quality of the data used in the research is tested. The reliability test results showed that the government trust, trust, trust, media farmers retailers trust, health risk, performance risk, financial risk, psychological risk of the Cronbach's Alpha coefficients were 0.920, 0.841, 0.882, 0.883, 0.880, 0.837, 0.854, 0.936, 0.70, said the scale has high internal consistency that can be used for the analysis of. Through KMO and Bartlett 's test to the influence factors of consumer food safety risk perception behavior validity analysis, KMO values were 0.740, 0.728, 0.738, 0.680, 0.735, 0.723, 0.737, 0.732, at the same time, the corresponding Bartlett' s test P values were close to 0, significantly less than the critical level, but also affect the consumer food safety risk perception factors measurement items data classification results of factor analysis of the ideal, the goodness of fit index model of ideal scale measurement results can be accepted. The exploratory factor showed that the cumulative explanation was 75.508%, and the rotation factor load of all items was over 0.854

The main dimensions of the sample data in the Pearson correlation analysis, the correlation coefficient from table 1 ( $p < 0.05$ ) can not be considered serious multicollinearity, but also can

see the correlation coefficient between the variables and assumptions in the forecast direction is substantially consistent.

Table 1 correlation coefficient of Pearson

	mean value	standa rd deviat ion	1	2	3	4	5	6	7	8
1 government trust	3.492	0.906	1							
2 media trust	3.146	0.787	0.281**	1						
3 farmers trust	3.375	0.908	0.331**	0.346*	1					
4 retailer trust	3.442	0.933	0.289**	0.316*	0.345*	1				
5 health risks	2.710	0.831	-0.311*	-0.679*	-0.346*	-0.322*	1			
6 Financial Risk	2.506	1.065	-0.706*	-0.254*	-0.336*	-0.250*	0.352*	1		
7 functional risk	2.688	0.788	-0.427*	-0.210*	-0.319*	-0.225*	0.295*	0.390*	1	
8 psychological risk	2.631	1.049	-0.348*	-0.299*	-0.345*	-0.760*	0.356*	0.368*	0.316*	1

Note: \* \* p<0.01, \* said p< 0.05.

**Regression analysis and hypothesis testing.** SPSS18.0 software was used to analyze the influencing factors of consumer food safety risk perception. The regression results are shown in table 2.

Table 2 regression analysis model of influencing factors of consumer food safety risk perception

	Health risk	function risk	financial risk	psycholog ical risk
Government trust V1	-0.286*** *	-0.375****	-0.835****	-0.396*** *
Media trust V2	-0.742*** *	-0.236**	-0.351**	-0.416***
Farmer trust V3	-0.319*** *	-0.281****	-0.397****	-0.398*** *
Retailer trust V4	-0.313*** *	-0.202****	-0.302**	-0.864*** *
Gender *V1	-0.079	-0.084	0.040	-0.109
Age *V1	0.020	-0.045	0.028	-0.043
Education level *V1	0.002	0.089	-0.014	0.087
Family income *V1	0.051	-0.036	-0.042	0.104
Gender *V2	-0.089	-0.130	-0.070	-0.150
Age *V2	-0.075	-0.083	-0.036	-0.103

Education level				
*V2	0.040	0.090	-0.022	0.100
Family income				
*V2	-0.074	-0.033	-0.026	0.101
Gender*V3	-0.113	-0.133	-0.075	-0.159
Age*V3	-0.003	-0.068	-0.013	-0.073
Education level*V3	-0.009	0.075	-0.045	0.073
Family income*V3	-0.049	0.030	-0.020	0.109
Gender*V4	-0.064	-0.103	-0.030	-0.011
Age*V4	0.015	-0.053	0.008	-0.047
Education level*V4	-0.011	0.074	0.047	0.068
Family income*V4	-0.096	-0.058	-0.064	-0.035
AdjustedR <sup>2</sup>	0.077	0.040	0.091	0.041
F	3.640****	2.314*	4.169****	2.348*

(Note: \*P < 0.05 on behalf of the significant level, \*\*P < 0.01 significant level, \*\*\*P < 0.005 \* on behalf of the significant level, \*\*\*\*P < 0.001 significant level. B coefficients in the table)

The basic model in Table 2 shows that the factors such as gender, age, education level and family income are very low, and the beta coefficient of risk perception is very low. Independent government trust because there is a significantly negative correlation between variables of health risk, performance risk, financial risk and psychological risk (beta, -0.375, -0.286 coefficients were -0.835 and -0.396 respectively, and there is a statistically significant). From the regression equation, the adjusted R<sup>2</sup> was 0.077, 7.7% of the variation in the level of interpretation, show that the regression model has good fitting results, F-measure is 3.640, the corresponding P value is 0.001, the overall effect is obvious, that the government trust has a significant negative impact on perceived risk, in order to verify the H1. The independent media trust is due to a significant negative correlation between variables of health risk, performance risk, financial risk and psychological risk (beta, -0.236, -0.742 coefficients were -0.351 and -0.416 respectively, and there is a statistically significant). From the regression equation, the adjusted R<sup>2</sup> was 0.040, 4% of the variation in the level of interpretation, show that the regression model has good fitting results, F-measure is 2.314, the corresponding P value is 0.001, the overall effect is remarkable, media shows that trust has a significant negative impact on perceived risk, in order to verify the H2. Independent farmers trust due to a significant negative correlation between variables of health risk, performance risk, financial risk and psychological risk (beta, -0.281, -0.319 coefficients were -0.397 and -0.398 respectively, and there is a statistically significant). From the regression equation, the adjusted R<sup>2</sup> was 0.091, 9.1% of the variation in the level of interpretation, show that the regression model has good fitting results, F-measure is 4.169, the corresponding P value is 0.001, the overall effect is remarkable, that farmers trust has a significant negative impact on perceived risk, in order to verify the H3. Independent retailers trust because there is a significantly negative correlation between variables of health risk, performance risk, financial risk and psychological risk (beta, -0.202, -0.313 coefficients were -0.302 and -0.864 respectively, and there is a statistically significant). From the regression equation, the adjusted R<sup>2</sup> was 0.041, 4.1% of the variation in the level of interpretation, show that the regression model has good fitting results, F-measure is 2.348,

the corresponding P value is 0.044, the overall effect is remarkable, indicates that the retailer trust has a significant negative impact on perceived risk, which proves H4.[5]

## **Conclusion**

First, the higher the degree of trust in the government, the lower the level of consumer psychology perception of food safety risk. Therefore, the consumers have very high confidence in the government, that the government is able to production safety supervision behavior of food enterprises, effective prevention and control of food safety and quality problems of the market, the degree of perception of consumers on food safety and health risk function risk, financial risk, psychological risk is low, do not worry about food consumption will bring a series of problems, such as the quality of health problems; second, the higher the level of trust in the media, the consumer mind risk level of the food safety perception will be lower, because the media as the information disclosure of the issue of food safety supervision plays an important role, if consumers believe that the media can be objective just play the role of public opinion, will not have exaggerated the food safety risk perception of the consumer perception of food safety All the health risk, performance risk, financial risk, psychological risk levels are low; third, farmers is the production of food raw materials suppliers, is to ensure that the source of food safety and quality problems, if consumers trust farmers can do green pollution-free food production, to provide raw materials for green food enterprises, so the enterprise can produce healthy food. At this time, the health of consumers on food safety risk, performance risk, financial risk, psychological risk perception is low; fourth, the retailer plays an important role in the food distribution process, the retailer has the right to choose different food distribution, and has the quality of food must be informed, if consumers believe the retailer to sell the food safety and health, can eliminate the concerns of consumers and increase consumer confidence in food, the perceived health risks to food safety, the function of risk, financial risk, psychological risk perception is low.

Department of food safety supervision in China should further increase the breadth and intensity of law enforcement, severely punish all kinds of behavior events of food safety harm, not all illegal food businesses left the opportunity to resort to deceit. At the same time, the government's food safety supervision department should carry out sampling of various food actively irregularly, and timely disclosure of information of all kinds of food safety testing, improve the openness and transparency of information released, improve consumer confidence in the government.

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